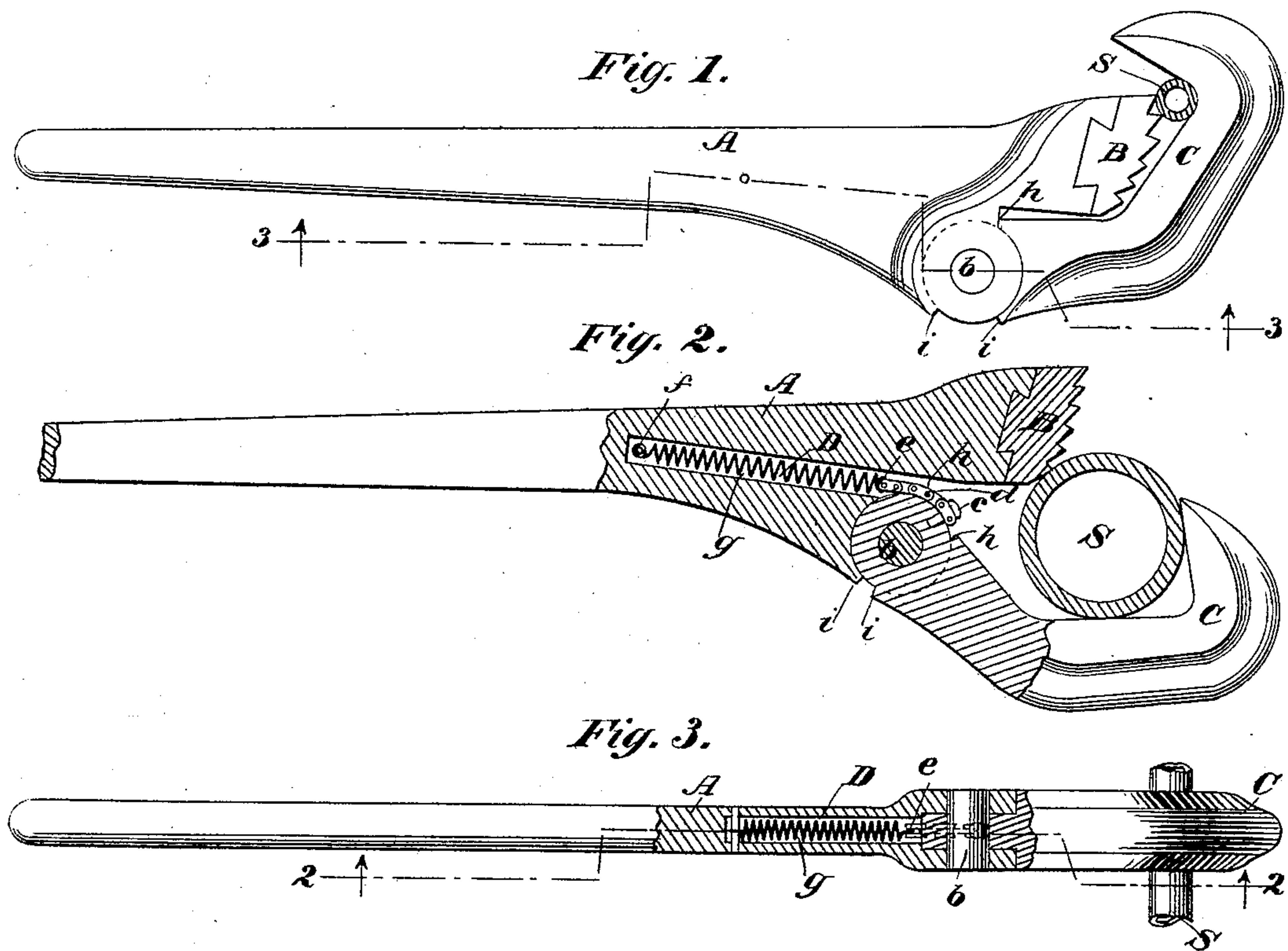


(No Model.)

J. L. TAYLOR.  
PIPE WRENCH.

No. 434,847.

Patented Aug. 19, 1890.



WITNESSES:

J. H. Buswell  
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# UNITED STATES PATENT OFFICE.

JAMES L. TAYLOR, OF MEMPHIS, TENNESSEE.

## PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 434,847, dated August 19, 1890.

Application filed March 8, 1889. Renewed July 17, 1890. Serial No. 359,090. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES L. TAYLOR, of Memphis, in the county of Shelby and State of Tennessee, have invented a new and useful Improvement in Pipe-Wrenches, of which the following is a full, clear, and exact description.

This invention relates to that description of self-adjusting pipe and other wrenches in which the fixed jaw of the wrench has combined with it a pivoted serrated jaw controlled by a spring and adapted to slip or yield when working the wrench back, but having a firm grip when operated in the opposite direction, after the fashion, but without the disadvantages, of a ratchet-wrench.

The object of my invention is to produce a wrench of this character which shall be cheap in its construction, strong and durable in its use, extremely simple, yet thoroughly effective in its operation on pipes, rods, nuts, unions, and couplings of all kinds, and wherever pipe-tongs and nut, monkey, or ratchet wrenches can be used; also, and particularly which is readily adapted to be easily adjusted to its work, applied thereto and removed therefrom by the one hand of the operator, and will take in bodies or work of largely-varying sizes and of different shapes.

My invention consists in certain novel constructions and combinations of parts in a wrench of the description above referred to, substantially as hereinafter described, and pointed out in the claims, and whereby the objects sought to be obtained are very perfectly secured.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a side view of a wrench embodying my invention with the jaws as closed upon a piece of pipe of small diameter. Fig. 2 is a partly sectional longitudinal view of the same wrench with the jaws as more widely opened and as gripping a pipe of larger size, and Fig. 3 is a partly sectional longitudinal view of the wrench at right angles to Figs. 1 and 2 upon the irregular line 3 3 in Fig. 1.

Referring to the drawings, A indicates the handle of the wrench constructed at its work-

ing end to receive a serrated detachable steel piece B, preferably dovetailed into position, and which forms the stationary jaw of the wrench.

C is the self-adjusting jaw of the wrench, of angular hook shape, so as to present two bearing-surfaces when required upon the pipe or body S being operated upon, as shown in Fig. 2, and so that the teeth of the stationary jaw engage with the pipe at a point a little over or beyond what with the bearing-points of the self-adjusting jaw would form an equilateral triangle, whereby the full power of the wrench is exerted in turning the pipe and the danger of crushing the pipe is reduced to a minimum. The jaw C is pivoted to the handle or stock A by a pin or rivet b and forms a circular knuckle-joint therewith.

Secured to the joint part of the jaw C on its inner circumferential portion is a stud or spur c, to which one end of a flexible connection d, that may be a short chain or copper band, is attached. The other end of this flexible connection is attached at e to one end of a spiral spring D, preferably made of brass, and which is connected at its inner end, as at f, to the handle A within an elongated cavity g, made in the latter, and within which hole or cavity both the spring D and flexible connection d are free to work. This arrangement of the spring and flexible connection or band dispenses with any intervening rod and insures the spring and band always being in a direct line with the strain, thus reducing friction and liability to break, and it effects a perfect self-adjustability or opening and closing action of the jaw C to grip the pipe when the wrench is worked in the one direction, and to relieve itself from grip when worked backward or in the opposite direction, as in other pipe-wrenches of similar character. The connection, too, of the spring and band excludes dirt or sand from getting into the recess g to cut or clog the band and spring and impair their action.

The inner side of the hinge or joint, of which the pin or rivet b is the pivot, is constructed with shoulders h h, which prevent the pivoted jaw striking against the serrated steel face-piece of the stationary jaw when the jaws are fully closed. Shoulders i i are also formed upon the outer side of said hinge



or joint to keep the jaw C from working too far back and to sustain it when the wrench is fully open and prevent it from unduly straining upon the spring D. The action of  
 5 said spring of course is to close the pivoted jaw and to prevent it from dropping away from the work when released to renew its grip, and it also makes the wrench self-ad-  
 10 justing to all sizes and kinds of work within its capacity.

The wrench as constructed can be applied to the object to be operated upon and can be removed from the same by only using one hand, thus leaving the other hand at liberty.  
 15 It is applied to the work by pressing the pivoted jaw against the object, causing the jaw to yield backward and admit the object, when by the action of the spring on the pivoted jaw the jaws of the wrench are instantly self-ad-  
 20 justed to the size and shape of the object being operated upon. It can be removed from the work by turning it sidewise, and said wrench can either be used as an ordinary and continuous nut-wrench or by reciprocating it  
 25 as a ratchet-wrench it can be worked in confined spaces, and which does not require removal from the object gripped while being worked.

Having thus described my invention, what  
 30 I claim as new, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture, a wrench provided with a stationary jaw B at its upper end or head, transversely-apertured  
 35 knuckles on its rear side just below the jaw B, a longitudinal bore or aperture *g*, extending downward between the adjacent ends of the stationary jaw and the said knuckles or ears, a hooked jaw C, extending over the

stationary jaw and having a transversely- 40  
 apertured circular knuckle or ear pivoted between the other knuckles and projecting to or slightly over the upper end of the bore *g*, a spring secured at its lower end in the bore *g*  
 45 by a transverse pin *f*, and a flexible connection connecting the upper end of the spring and to the knuckle of the movable jaw C, as at *c*, said flexible connection lying against the pe-  
 50 riphery of said movable knuckle when its jaw is opened, whereby the strain on the spring and flexible connection will always be in a straight line, substantially as set forth.

2. As an improved article of manufacture, a wrench provided with a stationary jaw B at its upper end or head and transversely-aper- 55  
 tured knuckles on its rear side just below the jaw B, a longitudinal bore or aperture *g*, extending downward between the adjacent ends of the stationary jaw and the said  
 60 knuckles or ears, a handle A, formed in a single piece with said head and knuckles, a hooked jaw C, having a transversely-aper-  
 tured circular knuckle or ear fitting between the other two knuckles and projecting to or  
 65 slightly over the upper end of the bore *g* and there provided with a lug *c*, a pivot *b*, uniting said knuckles, a spring secured at its lower  
 70 end in the bore *g* by a transverse pin *f*, and a flexible connection *d*, extending from the upper end of the spring to the lug *c* and lying  
 against the periphery of the movable knuckle when its jaw is opened, whereby the strain on the spring and connection will always be in a  
 straight line, substantially as set forth.

JAMES L. TAYLOR.

Witnesses:

ANGUS CAMPBELL,  
 JOHN H. BROWN.